Claims

1. A condenser, particularly for a motor vehicle air-conditioning circuit, comprising a multitude of stacked main-section plates (2) assembled to delimit first flow channels for a refrigerating fluid (F1) which alternate with second flow channels for a cooling fluid (F2), characterized in that it comprises at least two passes over the refrigerating fluid.

2. The condenser as claimed in claim 1, characterized in that the plates comprise communication passages (124) to allow the refrigerating fluid (F1) and the cooling fluid (F2) to pass from one flow channel to the other, annular ducts (68, 122) are provided alternately facing the communication passages so as to prevent fluids from mixing.

3. The condenser as claimed in claim 1 or 2, characterized in that the main-section plates are equipped with two communication passages intended for the passage of the refrigerating fluid (F1) and with two communication passages intended for the passage of the cooling fluid (F2).

4. The condenser as claimed in one of claims 1 to 3, characterized in that the stacked plates (2) are equipped with turned-up peripheral edges (3) which are joined together in a sealed manner.

5. The condenser as claimed in one of claims 1 to 4, characterized in that it comprises at least one inlet and one outlet for refrigerating fluid and at least one pass (a) over the refrigerating fluid communicating with said inlet, known as the inlet pass, and another pass (c) communicating with said outlet, known as the outlet pass, the cross section of the passes diminishing from the inlet pass towards the outlet pass.

6. The condenser as claimed in one of claims 2 to 5, characterized in that one refrigerating fluid communication passage or, as appropriate, one cooling fluid communication passage, is omitted in some of the main-section plates so as to determine passes for the circulation of the refrigerating fluid or, as appropriate, for the circulation of the cooling fluid.

7. The condenser as claimed in one of claims 1 to 6, characterized in that the plates (2) are arranged in a first series (94) for cooling the refrigerating fluid until it condenses, and a second series (96) for cooling the refrigerating fluid below the temperature at which it condenses.

8. The condenser as claimed in claim 7, characterized in that it comprises a bottle (100) built in between the first and second series of plates (94, 96).

9. The condenser as claimed in one of claims 1 to 8, characterized in that turbulence generators (132, 136) are arranged between the plates (2).

10. The condenser as claimed in one of claims 1 to 8, characterized in that the plates have reliefs (144, 150, 158, 160) which constitute turbulence generators.

11. The condenser as claimed in one of claims 1 to 10, characterized in that the hydraulic diameter of the flow channels for the fluids (F1 and F2) is between 0.1 mm and 3 mm.

12. Condenser as claimed in one of claims 2 to 11, characterized in that the annular ducts consist of bowls (122) formed in the plates (2).

13. The condenser as claimed in one of claims 1 to 12, characterized in that the cooling fluid (F2) consists

of the water from the motor vehicle engine cooling circuit.

14. An air-conditioning circuit, particularly for the cabin of a motor vehicle, comprising an evaporator, a compressor, a condenser, in which a refrigerating fluid circulates, characterized in that the condenser is in accordance with one of claims 1 to 13.